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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/654,943	09/01/2000	Seung Kuk Ahn	8733-294-00	7898

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EXAMINER

KOVALICK, VINCENT E

ART UNIT

PAPER NUMBER

2673

DATE MAILED: 12/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/654,943

Applicant(s)

AHN, SEUNG KUK

Examiner

Vincent E Kovalick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 27 September 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Request for reconsideration*

1. This Office Action is in response to Applicant's Request for Reconsideration dated September 27, 2002 in response to PTO Office Action dated June 28, 2002. Applicant's Remarks relative to the 35 U.S.C. 112, second paragraph rejections of claims 1-9 are sufficient to overcome the '112, 2nd' rejection of said claims 1-9.

### *Claim Rejections - 35 USC § 103*

2 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (USP 6,342,876) taken with Okumura et al. (USP 5,945,972).

Relative to claims 1 and 5, Kim **teaches** a method and apparatus for driving liquid crystal panel in cycle inversion (col. 2, lines 57-67 and col. 3, lines 1-60); Kim further **teaches** a methodology and apparatus for driving a liquid crystal panel having pixels arranged at each

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intersection between gate lines and data lines in a matrix type in an inversion system, comprising:

first signal supplying means for setting at least one pixel block each of which includes at least two data lines within the liquid crystal panel to apply data signals having the same polarity to the adjacent pixels in a gate line direction within the pixel block; and second signal supplying means for applying data signals having a polarity contrary to the adjacent pixels at the left and right sides thereof to the pixels within the other pixel areas (col. 5, lines 42-67 and Fig. 10).

Kim **does not teach** applying data signals having a polarity contrary to the adjacent pixels at the left and right side thereof to the pixels within the other pixel areas except for the pixel block area. Okumura et al. **teaches** a display device comprising controls for writing image signals into pixel in accordance with control signals (col. 2, lines 23-67 and col. 2, lines 1-55); Okumura et al. further **teaches** the means for applying data signals to specific pixel areas except for the pixel block area (col. 21, lines 64-66).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device a taught by Kim the feature as taught by Okumura in that said feature imparts to the system the means to direct data input to, or exclude data signals from specific pixel blocks.

Regarding claim 2, Kim **teaches** the step wherein the pixel block is positioned at a boundary portion between column drivers (col. 5, lines 42-49 and Fig. 10).

Relative to claim 3, Kim **teaches** the step wherein the pixel block includes at least two data lines to which data is applied from the same column driver (col. 5, lines 42-67 and Fig. 10, item 22).

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Regarding claim 4, Kim **teaches** the step wherein all the pixels within the liquid crystal panel responds to the data signals having a polarity inverted ever frame (col. 1, lines 40-47).

Relative to claim 6, Kim **teaches** an apparatus for driving a liquid crystal panel comprising: line-inversion control means for controlling the first signal supplying means to apply the data signals having the same polarity to the adjacent pixels in the gate line direction (col. 1, lines 25-29), and dot-inversion control means for controlling the second signal supplying means to apply the data signals having a polarity contrary to the adjacent pixels at the left and right sides thereof (col. 1, lines 40-61).

Relative to claim 7, Kim **teaches** said apparatus wherein the first and second signal supplying means comprises: at least two signal inverters for responding to control signals applied from the line-inversion control means and the dot-inversion control means to invert phases of input data signals (col. 3, lines 1-10).

4. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim taken with Okumura et al. as applied to claim 7 in item 3 hereinabove, and further in view of Au et al. (USP 6,335,719).

Relative to claims 8-9, Kim taken with Okumura et al. **does not teach** an apparatus for driving a liquid crystal panel wherein all, or any one of, the odd-numbered signal inverters supplied with odd-numbered data signals and the even-numbered signal inverters supplied with even-numbered data signals respond to the control signal from the line-inversion control means to invert the input data signals.

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An et al. **teaches** a method and apparatus for driving liquid crystal panel in DOT inversion (col. 2, lines 21-67 and col. 3, lines 1-8); An et al. further **teaches** an apparatus for driving a liquid crystal panel wherein all, or any one of, the odd-numbered signal inverters supplied with odd-numbered data signals and the even-numbered signal inverters supplied with even-numbered data signals respond to the control signal from the line-inversion control means to invert the input data signals (col. 5, lines 37-50).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Kim taken with Okumura et al. the feature as taught by Au et al. in order to incorporate the means to operate on the data signals to achieve line-inversion.

### *Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	6,097,352	Zavracky et al.
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U. S. Patent No.	5,488,388	Taniguchi et al.
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***Responses***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Vincent E. Kovalick** whose telephone number is **(703) 306-3020**. The examiner can normally be reached Monday-Thursday from 9:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Bipin Shalwala**, can be reached at **(703) 305-4938**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

***Inquires***

7. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is **(703) 306-0377**.

  
Vincent E. Kovalick